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ments are generally good, and that the observations have been carefully made. In three instances, however, he finds that the readings of the barometer are almost one-tenth of an inch too high, and he purposes to use the differences thus found as index-errors in the reduction of future observations made by these instruments, till their actual index-errors are determined by direct comparison with a standard barometer. In five instances the mean temperature of the year from observations differed almost one degree from that found by calculation. At one of these places only have the instruments been compared with standards, and hence it is very probable that the difference found at this place may be due to local causes, of which this difference is a measure.

He finds also, that, notwithstanding the decrease of temperature with increase of latitude, the temperature of the dew-point, at all places at about the same elevation, and distant from the influence of the sea near the south coast, is almost alike, and hence that the actual amount of water distributed in the atmosphere is the same: this result was unexpected, and if confirmed by subsequent observations will be important.

The author observes that the tables fully explain the peculiarity of the weather in the counties of Cornwall and Devon, and near the sea; the periodical ranges of temperature in these localities being much less than in others, though they are found to enjoy only the mean annual temperatures due to their latitudes.

He remarks that the agreement between the observed and calculated values being found to be so close, the mean meteorological elements for the year 1849 for any place in England may be computed, with a close approximation to the truth.

To his paper are appended some sheets of curves exhibiting the simultaneous results from all the places, and these show that if any two or more places be taken in the same latitudes, the curves are nearly parallel; but, that if curves of places whose latitudes are different be compared, the one is found to be much bolder than the other. He considers that these sheets show in a very satisfactory manner that very considerable confidence may be placed in the results, and that a great advance has taken place within the last few years in the care and attention to meteorological investigation.

2. "On the Temperature of Man within the Tropics." By John Davy, M.D., F.R.S., &c.

In a former paper which was published in the *Philosophical Transactions* for 1845, the author gave the results of an inquiry on the temperature of man in England, as measured under the tongue by a thermometer made for the purpose, and using certain precautions necessary to ensure accuracy. An inquiry of the same kind and with the same instrument he has conducted in the West Indies, extending over a period of nearly three years and a half. This is the subject of his present communication. For the sake of comparison, he has followed in it nearly the same order as in the former. The results are given in a tabular form, divided into sections, and are followed by an appendix in which are recorded the daily obser-

vations in monthly sequence, accompanied by observations on the pulse, respiration and atmospheric temperature.

The following are the principal conclusions which seem to be warranted by the results:—

1. That the temperature of man within the tropics, on an average, is nearly 1° higher than in a temperate climate, such as that of England.

2. That it is constantly fluctuating, in health, within a range of from 1° to 2° in the twenty-four hours.

3. That the order of its fluctuation is not the same as in England, being lowest in the early morning, after the night's rest, and not as in England, at night, before going to rest.

4. That all exertion, whether of body or mind, except it be very gentle, varies the temperature; that gentle exercise, as carriage exercise or slow walking, has a depressing influence.

5. That between the temperature of the surface of the body and that of the deep-seated parts, there is little difference, not exceeding on the average 2° or 3° , and often less; with which there appears to be connected increased activity of the function of the skin and a diminished action of the kidneys.

6. That in a healthy state of the system, increase of temperature from exercise or any other exciting cause, is of short duration, rapidly subsiding on rest, and commonly followed by some depression, *i. e.* below its average degree.

7. That in sea-sickness, except when severe, the tendency is to equalization of temperature; but when severe, to increase of temperature, the marked effect of deranged health, with few if any exceptions.

8. That a sea voyage without sea-sickness, has also an equalizing influence on the temperature, not preventing however its increase with increase of atmospheric temperature, and its lowering with diminution of atmospheric temperature.

The author expresses belief that the results obtained admit of practical application in relation to health and disease: on this part of the subject, however, as unsuitable to the occasion, he does not dwell, reverting only to the circumstance pointed out in his former paper and now confirmed, that variation, not equability of the temperature of man within certain limits, however produced, is conducive to health, presenting therein an instance of happy adaptation as regards his mode of life and sphere of action.

The Society then adjourned to the 16th of May.

May 16, 1850.

The EARL OF ROSSE, President, in the Chair.

The following papers were read:—

1. "On the Geographical Distribution of the *Bulimi*, a group of terrestrial *Mollusca*; and on the modification of their calcifying functions according to the local physical conditions in which the